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(72) Inventor: Brown, David Lloyd
La Jolla, California 92037 (US)

(74) Representative:
MacGregor, Gordon
Eric Potter Clarkson,
Park View House,
58 The Ropewalk
Nottingham NG1 5DD (GB)

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(71) Applicant: Brown, David Lloyd
La Jolla, California 92037 (US)

(54) **Device and method for locating inflamed plaque in an artery**

(57) A system for locating inflamed plaque in an artery of a patient includes a catheter (24) with an expander (26) mounted at a catheter distal end (46). An infrared carrier (20), e.g., an optical fiber is mounted on the catheter with a carrier distal end (28) attached to the expander (26). A sensor (22) is connected to a carrier proximal end (30) to measure infrared radiation transmitted through the carrier (20) from the carrier distal end (28). In use, the expander (26) is operable to selectively move the carrier distal end (28) into contact with the arterial wall (14). Infrared radiation can then be measured to determine the temperature at the arterial wall. Temperatures at various locations can be taken, with elevated temperatures being indicative of inflamed plaque.

